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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/721,095	11/26/2003	Ben To Fan Wong	1928-0154P	6181

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EXAMINER
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NGUYEN, HANH N

ART UNIT	PAPER NUMBER
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2834

DATE MAILED: 04/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/721,095	<b>Applicant(s)</b> WONG, BEN TO FAN	
	<b>Examiner</b> Nguyen N Hanh	<b>Art Unit</b> 2834	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11/26/04 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____.  |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1-6,8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Iijima in view of Gakenholz.

Regarding claim 1, Iijima shows an end cap assembly for an electric motor comprising: an outer part (18 in Fig. 1) supporting a bearing (28) and motor terminals; and an inner part having a first brush cage (35 in Fig. 6), a second brush cage (36) spaced from the first brush cage by 180 degrees. Iijima fails to show a provision for locating a third and a fourth brush cage at a desired location circumferentially between the first and second brush cages.

However, Gkenholz discloses a drive mechanism for windshield wiper systems on motor vehicles comprise a first brush case and the second brush case for pair of brushes 12 and 13 (inherent because the brush is always located inside a brush case or a brush box) and a provision (collector 11 in Fig. 1 and attaching means) for locating a third and a fourth brush cage (for brushes 14 and 15) at a desired location circumferentially between the first and second brush cages (Fig. 1-4 and Col. 3, lines 25-60) for the purpose of controlling different direction of rotation (Col. 2, lines 5-10).

Since Iijima and Gakenholz are in the same field of endeavor, the purpose disclosed by Gakenholz would have been recognized in the pertinent art of Iijima.

It would have been obvious at the time the invention was made to a person having an ordinary skill in the art to modify Iijima by providing a provision for locating a third and a fourth brush cage at a desired location circumferentially between the first and second brush cages as taught by Gakenholz for the purpose of controlling different direction of rotation.

Regarding claim 2, Iijima also shows an assembly wherein the first and second brush cages are integrally molded with the inner part (Fig. 1 and 6).

Regarding claim 3, Gakenholz discloses the claimed invention except for showing the third and fourth brush cages are locatable angularly spaced between 75 degrees and 90 degrees from the first brush cage.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to locate the third and fourth brush cages at angularly space between 75 degrees and 90 degrees from the first brush cage since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. In re Aller, 105 USPQ 233.

Regarding claims 4 and 5, Gakenholz does not show means to attach the brush cages to the collector (11) is by using epoxy resin or ultrasonic welding, however, the method of forming the device is not germane to the issue of patentability of the device itself. Therefore, these limitations have not been given patentable weight.

Regarding claim 6, Gekenhollz also discloses brush assembly wherein a detent (attaching means to hold brush holder to collector 11) is formed between the third and fourth brush cages and the inner part, which detent radially locates the third and forth brush cages so that each of the brush cages has a corresponding part (Fig. 2 and Col. 4, lines 21-25).

Regarding claim 8, Iijima also shows an assembly wherein the inner and outer parts have noise suppression components.

Regarding claim 9, Iijima also shows an assembly wherein the noise suppression components of the inner part includes chokes (47 in Fig. 6) connected to shunts (53) of brushes slidably mounted in the brush cages by way of a link connector which makes a mechanical type connection with the choke.

2. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Iijima in view of Gakenholz and further in view of Gilchrist.

Regarding claim 7, Iijima and Gakenholz show all limitations of the claimed invention except showing the detent means comprises projections on an axially outer mating surface of each of the third and fourth brush cages which engage arcuate grooves in an axially inner locating surface of the inner part and the locating surface is juxtaposed the mounting surface of each of the third and fourth brush cages to set the radial distance while allowing the circumferential spacing to be determined during fixing of the third and fourth brush cages to the inner part during assembly.

However, Gilchrist discloses a brush card with a circumferentially adjustable brush cage wherein the detent means comprises projections (bolt 30 and 31 in Fig. 1

Art Unit: 2834

and 4) on an axially outer mating surface of brush cage which engage arcuate grooves (25) in an axially inner locating surface of the inner part and the locating surface is juxtaposed the mounting surface of the brush cages to set the radial distance while allowing the circumferential spacing to be determined during fixing of the brush cages to the inner part during assembly for the purpose of adjusting the brush cage relative to the locating surface (Col. 1, lines 20-25).

Since Iijima, Gakenholz and Gilchrist are in the same field of endeavor, the purpose disclosed by Gilchrist would have been recognized in the pertinent art of Iijima and Gakenholz.

It would have been obvious at the time the invention was made to a person having an ordinary skill in the art to modify Iijima and Gakenholz by using detent means with projections on an axially outer mating surface of each of the third and fourth brush cages which engage arcuate grooves in an axially inner locating surface of the inner part and the locating surface is juxtaposed the mounting surface of each of the third and fourth brush cages to set the radial distance while allowing the circumferential spacing to be determined during fixing of the third and fourth brush cages to the inner part during assembly as taught by Gilchrist for the purpose of adjusting the brush cage relative to the locating surface.

### ***Conclusion***

3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hanh N Nguyen whose telephone number is (571) 272-2031. The examiner can normally be reached on Monday through Friday.

Art Unit: 2834

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Darren Schuberger, can be reached on (571) 272-2044. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9306 for regular communications and (703) 872-9306 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1782.

HNN

April 13, 2004

A handwritten signature in black ink, appearing to read 'Dangle', written in a cursive style.

**DANGLE  
PRIMARY EXAMINER**